

Submit original with signatures + 1 copy + electronic copy to UAF Governance.
See <http://www.uaf.edu/uafgov/faculty/cd> for a complete description of the rules governing curriculum & course changes.

TRIAL COURSE OR NEW COURSE PROPOSAL

SUBMITTED BY:

Department		College/School	
Prepared by	Laura Conner	Phone	(907) 474-6950
Email Contact	<u>ldconner@alaska.edu</u>	Faculty Contact	Laura Conner

1. ACTION DESIRED

(CHECK ONE):

Trial Course ☐New Course ☒**2. COURSE IDENTIFICATION:**

Dept

STO

Course #

604

No. of Credits

4

Justify upper/lower division status & number of credits:

The course will involve 12 hours per week of internship experience, equaling 4 credits. It is part of the proposed Graduate Certificate in Science Teaching and Outreach.

Revised statement

3. PROPOSED COURSE TITLE:

Science Teaching and Outreach Internship

4. CROSS LISTED?

YES/NO

NO

If yes, Dept:

Course #

(Requires approval of both departments and deans involved. Add lines at end of form for such signatures.)

5. STACKED?

YES/NO

NO

If yes, Dept:

Course #

6. FREQUENCY OF OFFERING:

Every semester. This is an internship course.

(Every or Alternate) Fall, Spring, Summer — or As Demand Warrants

7. SEMESTER & YEAR OF FIRST OFFERING (if approved)

Fall 2014

8. COURSE FORMAT:

NOTE: Course hours may not be compressed into fewer than three days per credit. Any course compressed into fewer than six weeks must be approved by the college or school's curriculum council. Furthermore, any core course compressed to less than six weeks must be approved by the core review committee.

COURSE FORMAT:

(check one)

12345X

6 weeks to full semester

OTHER FORMAT (specify)

Mode of delivery (specify lecture, field trips, labs, etc)

Internship

9. CONTACT HOURS PER WEEK:LECTURE

hours/weeks

LAB

hours /week

PRACTICUM

hours /week

Note: # of credits are based on contact hours. 800 minutes of lecture=1 credit. 2400 minutes of lab in a science course=1 credit. 1600 minutes in non-science lab=1 credit. 2400-4800 minutes of practicum=1 credit. 2400-8000 minutes of internship=1 credit. This must match with the syllabus. See <http://www.uaf.edu/uafgov/faculty/cd/credits.html> for more information on number of credits.

OTHER HOURS (specify type)

~~10~~ hours internship per week
12
 10. COMPLETE CATALOG DESCRIPTION including dept., number, title and credits (50 words or less, if possible):

STO 604 Science Teaching and Outreach Internship 4 credits

(0+0+12)

Course description

Under the supervision of a faculty member, students gain professional experience in science teaching or outreach by choosing one of the following strands: 1) higher education, 2) formal K-12 education, or 3) informal education. An internship plan is developed prior to enrollment and agreed upon by instructor of record, faculty mentor or K-12 teacher mentor, and student.

11. COURSE CLASSIFICATIONS: (undergraduate courses only. Use approved criteria found on Page 10 & 17 of the manual. If justification is needed, attach on separate sheet.)

H = Humanities ☐ N = Natural Science ☐ S = Social Sciences ☐

Will this course be used to fulfill a requirement for the baccalaureate core? ☐ YES ☒ NO

IF YES, check which core requirements it could be used to fulfill:

O = Oral Intensive, Format 6 ☐ W = Writing Intensive, Format 7 ☐ Natural Science, Format 8 ☐

12. COURSE REPEATABILITY:

Is this course repeatable for credit? ☐ YES ☒ NO

Justification: Indicate why the course can be repeated (for example, the course follows a different theme each time).

How many times may the course be repeated for credit? ☐ TIMES

If the course can be repeated with variable credit, what is the maximum number of credit hours that may be earned for this course? ☐ CREDITS

13. GRADING SYSTEM:

LETTER: ☐ PASS/FAIL: ☒

RESTRICTIONS ON ENROLLMENT (if any)

14. PREREQUISITES

For higher education strand, STO 666 Scientific Teaching. For formal K-12 education or informal education strands, STO 601 Communicating Science.

These will be *required* before the student is allowed to enroll in the course.

RECOMMENDED

Classes, etc. that student is strongly encouraged to complete prior to this course.

15. SPECIAL RESTRICTIONS, CONDITIONS

16. PROPOSED COURSE FEES

\$ ☐

Has a memo been submitted through your dean to the Provost & VCAS for fee approval? Yes/No ☐

17. PREVIOUS HISTORY

Has the course been offered as special topics or trial course previously? Yes/No ☐ No

If yes, give semester, year, course #, etc.:

18. ESTIMATED IMPACT

WHAT IMPACT, IF ANY, WILL THIS HAVE ON BUDGET, FACILITIES/SPACE, FACULTY, ETC.

No budget impact is anticipated; the costs are limited to faculty salaries and minimal administrative costs (copying, etc.). Laura Conner, the Director of CNSM Outreach, will teach the course as part of her regular workload. No impacts on facilities and/or space is anticipated.

19. LIBRARY COLLECTIONS

Have you contacted the library collection development officer (ffklj@uaf.edu, 474-6695) with regard to the adequacy of library/media collections, equipment, and services available for the proposed course? If so, give date of contact and resolution. If not, explain why not.

No ☐

Yes ☒

Karen Jensen, the Library Collection Development Officer, was contacted on August 27th, 2012 about the Graduate Certificate in Science Education and Outreach. We determined that the collections contain sufficient journal subscriptions in science education to support these efforts. In addition, many of the required course books (National Research Council) for the certificate are freely available as pdf files.

20. IMPACTS ON PROGRAMS/DEPTS

What programs/departments will be affected by this proposed action?

Include information on the Programs/Departments contacted (e.g., email, memo)

This course will be open to all science and engineering graduate students (after the prerequisites are complete), and is envisioned as a required course for the proposed Scientific Teaching and Outreach Program. Any science or engineering graduate student can take the course, regardless of whether or not they are enrolled in the certificate program (after prerequisites).

21. POSITIVE AND NEGATIVE IMPACTS

*Please specify **positive and negative** impacts on other courses, programs and departments resulting from the proposed action.*

This course is envisioned as part of a package of courses in the proposed Graduate Certificate in Science Teaching and Outreach. Completion of this certificate will better prepare science graduate students for the responsibilities of faculty and other professional positions, and is expected to make them more competitive in the job market.

JUSTIFICATION FOR ACTION REQUESTED

The purpose of the department and campus-wide curriculum committees is to scrutinize course change and new course applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please address this in your response. This section needs to be self-explanatory. Use as much space as needed to fully justify the proposed course.

This internship course is a critical part of the proposed Graduate Certificate in Science Teaching and Outreach. It will give students practical experience based on knowledge gained in previous courses. The certificate will make graduate students better teacher and communicators of their science. These skills will help raise the quality of undergraduate instruction at UAF by arming Teaching Assistants with teaching training. The graduate students themselves will benefit by becoming increasingly competitive on the job market after graduation, and will become better science ambassadors to the public.

APPROVALS:

AS PER ATTACHED.

	Date	
Signature, Chair, Program/Department of:		
	Date	
Signature, Chair, College/School Curriculum Council for:		
	Date	
Signature, Dean, College/School of:		
	Date	
Signature of Provost (if applicable)		
Offerings above the level of approved programs must be approved in advance by the Provost.		

ALL SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION TO THE GOVERNANCE OFFICE

	Date	
Signature, Chair, UAF Faculty Senate Curriculum Review Committee		

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APPROVALS:

	Date	Sept 14, 2012
Signature, Chair, Program/Department of: <u>Biology and Wildlife</u>		

	Date	9/25/2012
Signature, Chair, College/School Curriculum Council for: <u>CNSM</u>		

	Date	9/25/12
Signature, Dean, College/School of: <u>CNSM</u>		

	Date	
Signature of Provost (if applicable)		

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	Date	
Signature, Chair, UAF Faculty Senate Curriculum Review Committee		

ATTACH COMPLETE SYLLABUS (as part of this application).

Note: syllabus must follow the guidelines discussed in the Faculty Senate Guide <http://www.uaf.edu/uafgov/faculty/cd/syllabus.html>.

The department and campus wide curriculum committees will review the syllabus to ensure that each of the items listed below are included. If items are missing or unclear, the proposed course change will be denied.

SYLLABUS CHECKLIST FOR ALL UAF COURSES

During the first week of class, instructors will distribute a course syllabus. Although modifications may be made throughout the semester, this document will contain the following information (as applicable to the discipline):

1. Course information:

☐ Title, ☐ number, ☐ credits, ☐ prerequisites, ☐ location, ☐ meeting time
(make sure that contact hours are in line with credits).

2. Instructor (and if applicable, Teaching Assistant) information:

☐ Name, ☐ office location, ☐ office hours, ☐ telephone, ☐ email address.

3. Course readings/materials:

☐ Course textbook title, ☐ author, ☐ edition/publisher.
☐ Supplementary readings (indicate whether ☐ required or ☐ recommended) and
☐ any supplies required.

4. Course description:

☐ Content of the course and how it fits into the broader curriculum;
☐ Expected proficiencies required to undertake the course, if applicable.
☐ Inclusion of catalog description is *strongly* recommended, and
☐ Description in syllabus must be consistent with catalog course description.

5. ☐ Course Goals (general) and ☐ Student Learning Outcomes (more specific)

6. Instructional methods:

☐ Describe the teaching techniques (eg: lecture, case study, small group discussion, private instruction, studio instruction, values clarification, games, journal writing, use of Blackboard, audio/video conferencing, etc.).

7. Course calendar:

☐ A schedule of class topics and assignments must be included. Be specific so that it is clear that the instructor has thought this through and will not be making it up on the fly (e.g. it is not adequate to say "lab". Instead, give each lab a title that describes its content). You may call the outline Tentative or Work in Progress to allow for modifications during the semester.

8. Course policies:

☐ Specify course rules, including your policies on attendance, tardiness, class participation, make-up exams, and plagiarism/academic integrity.

9. Evaluation:

☐ Specify how students will be evaluated, ☐ what factors will be included, ☐ their relative value, and
☐ how they will be tabulated into grades (on a curve, absolute scores, etc.)

10. Support Services:

☐ Describe the student support services such as tutoring (local and/or regional) appropriate for the course.

11. Disabilities Services:

The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials.

☐ State that you will work with the Office of Disabilities Services (208 WHIT, 474-5655) to provide reasonable accommodation to students with disabilities."

COURSE SYLLABUS

Science Teaching and Outreach Internship, STO 604

Credits: 4 credits

Grading: Pass/fail

Timing: The internship is completed during the course of a single semester. The internship plan must be completed and approved prior to the beginning of the semester in which the internship takes place. The student is expected to dedicate 12 hours per week to the internship during the semester in which the internship takes place (9600 total minutes over 14 weeks). In some cases, internship work can take place in the summer. In this case, the internship proposal must be submitted by prior to the beginning of summer.

Prerequisites: For higher education strand, STO 666 Scientific Teaching. For formal K-12 education or informal education strands, STO 601 Communicating Science.

Instructor/Course Coordinator:

Dr. Laura Carsten Conner
907-474-6950
ldconner@alaska.edu
Bunnell 305 A

Office hours: Tues 10AM-12PM or by appointment

Course description

Under the supervision of a faculty member, students gain professional experience in science teaching or outreach by choosing one of the following strands: 1) higher education, 2) formal K-12 education, or 3) informal education. An internship plan is developed prior to enrollment and agreed upon by instructor of record, faculty mentor or K-12 teacher mentor, and student.

Internship purpose and objectives

The science teaching and outreach internship allows students to apply the knowledge gained through earlier coursework to a real-life setting. Depending on interests and career goals, students will focus on one of four strands:

1. Higher education strand

Students in the higher education strand work with the course coordinator to identify an appropriate course and faculty mentor prior to the beginning of the internship. Once the course is identified, the student will review the existing course syllabus and identify a sub-topic or topics as a focus for developing active teaching activities. The student will design and implement at least one teachable unit, including both formative and summative student assessment and assessment of the efficacy of the teachable unit. The student will be expected to reflect on the strengths and shortcomings of their units and consider how they would revise it the next time they teach the unit. This will form an additional part of their teaching portfolio.

2. Formal K-12 education strand

Students in the formal K-12 education strand work with the course coordinator to identify a K-12 classroom and appropriate K-12 teacher mentor. The student will work with the K-12 teacher to identify the timing and focus of the internship (including a review of required curriculum, GLE's, and state standards). The student will design and implement at least one teachable unit, including both formative and summative student assessment and assessment of the efficacy of the teachable unit. The student will be expected to reflect on the strengths and shortcomings of their units and consider how they would revise it the next time they teach the unit. This will form an additional part of their teaching portfolio.

3. Informal science education strand

Students in the informal science education strand work with the course coordinator to identify out-of school science programs or activities that can serve as the basis for the internship activities. Internship activities can vary, but may include: 1) developing and delivering modules for UAF summer programs such as ASRA, 2) developing and delivering a series of talks for the general public in venues such as Murie Science Center, 3) partnering with the UAMN museum to assist with exhibits or educational programs, or 4) partnering with local or rural school districts to develop and deliver family science night festivals. The student will design formative assessments for the activities, and will be expected to reflect on the strengths and shortcomings of their activities, including possible future revisions.

Learning outcomes

Students participating in the internship will:

- Build expertise in teaching and hone teaching skills
- Develop and implement a teachable unit or a set of informal science activities
- Gain new perspectives about teaching and/or outreach
- Reflect on the internship experience

Internship plan

Prior to the start of the semester or the summer during which the internship will take place, each student will meet with the course coordinator to identify an appropriate internship. The student's thesis advisor **MUST** approve the internship. The student will complete an internship planning form that includes:

- 1) Internship strand
- 2) Specific focus of internship (e.g., which undergraduate course, K-12 classroom, or informal project)
- 3) Partnering organizations and/or mentors (must be approved by all partners or mentors)
- 4) Specific roles and responsibilities of the student
- 5) Specific responsibilities of the partner and/or mentor
- 6) Timeline of project
- 7) Signatures of student, course coordinator, partners and mentors, and thesis advisor

The planning form must be completed and signed at least **2 weeks** prior to the start of the internship. Some projects may require considerable advanced planning, and it is advisable to contact the program coordinator several months in advance of the internship.

Required Textbooks

There are no required textbook for this course.

Mentoring/supervision of internship

The overall mentoring and supervision of the internship will be split between the course coordinator and the mentor, and will differ slightly according to strand. For all strands, the course coordinator (Conner) will be responsible for assisting the intern in finding a suitable placement and will meet regularly with the intern to discuss progress. Conner has worked extensively with K-12 teachers in the district, as well as with informal science institutions such as the Museum of the North and others. For all strands, the internship mentor will meet weekly with the intern during the course of the internship and give feedback on the development and execution of the teachable unit or informal activity plan. For strand 1, the mentor will be a UAF professor that is actively teaching a course using active learning techniques. Grading will fall to the faculty mentor. For strand 2, the mentor will be a K-12 teacher. For strand 3, the mentor will vary. Examples include education managers or exhibit developers in informal learning institutions. The course coordinator will meet with the mentor at the beginning, middle, and end of the internship experience. Grading will be shared between the course coordinator and the course mentor for strands 2 and 3.

Assignments and Grading

Grading is pass/fail (a pass requires a score of $\geq 80\%$)

<i>Item</i>	<i>Portion of Final Grade</i>
Internship plan	10%
Teachable unit or informal activity plan, including assessment	40%
Execution of teachable unit or informal activity plan	40%
Written reflection	10%

In addition to the internship plan (described above), students will submit a written plan that describes their teaching unit or informal activity plan. This plan will vary in length and format depending on the internship strand. A rubric will be distributed to each student that outlines the expectations. Finally, each student is expected to provide a 2-page written reflection about their internship experience. This reflection will become part of the teaching portfolio of the student.

The teachable unit (for strands 1 and 2) or informal activity plan (for strand 3), in addition to the execution of the unit or plan, will form the bulk of the student's grade. For strands 2 and 3, the course coordinator will work with the mentor to assess the student. The written teachable unit or formal activity plan will be evaluated by both the course coordinator and the mentor according to a rubric (attached) developed by leaders in the Scientific Teaching field. NOTE: for the informal activity plan, assessment will largely take a formative, rather than a summative, form. The evaluation of the execution of the plan will fall to the mentor, although an appropriate rubric for evaluation of the execution will be co-developed and agreed upon in advance by the course coordinator and the mentor. For strand 1, higher education, the grading will be the sole responsibility of the faculty mentor, although the course coordinator will still assist with placement and development of the internship plan.

Plagiarism/Academic Honesty

Disciplinary action may be initiated in cases of plagiarism, cheating, and/or academic dishonesty. Please refer to the student code of conduct:

http://www.uaf.edu/catalog/current/academics/regs3.html#Student_Rights

Student Support

Students with special needs or concerns can contact Student Support Services (474-6844). Please let us know at the beginning of the semester if you will require accommodations due to a documented disability, and we will work with you in conjunction with the Office of Disability Services (203 WHIT, 474-7043).